

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-4 (canceled)

Claim 5 (previously presented): A process for forming a solder mask comprising:
coating a liquid photoimageable ink on a carrier film to form a liquid photoimageable ink layer on said carrier film;

drying said liquid photoimageable ink layer to form a photoimageable resist layer comprising a plurality of separate photoimageable resist layer portions, thereby forming at least one photoimageable resist layer bearing film comprising a plurality of photoimageable resist layer bearing film portions, each of said photoimageable resist layer bearing film portions bearing thereon at least one said photoimageable resist layer portion;

laminating said photoimageable resist layer bearing film on at least one side of a substrate so as to bring the upper surface of said photoimageable resist layer into contact with said substrate;

exposing said photoimageable resist layer to light through said carrier film to form an exposed resist layer;

removing said carrier film from said exposed resist layer;

developing said exposed resist layer to form a developed resist layer;

curing said developed resist layer to form a solder mask on said substrate; and

cutting said photoimageable resist layer bearing film into a plurality of said photoimageable resist layer bearing film portions so as to have each of said photoimageable resist layer bearing film portions bear thereon at least one of said separate photoimageable resist layer portions prior to the laminating of said photoimageable resist layer bearing film on at least one side of said substrate.

Claim 6 (previously presented): The process for forming a solder mask as claimed in claim 5, wherein in the step of laminating said photoimageable resist layer bearing film on at least one side of a substrate, said photoimageable resist layer bearing film portion is laminated on at least one side of said substrate so as to bring the upper surface of at least one of said photoimageable resist layer portions into contact with said substrate.

Claim 7 (previously presented): A process for forming a solder mask comprising:
coating a liquid photoimageable ink on a carrier film to form a liquid photoimageable ink layer on said carrier film;

drying said liquid photoimageable ink layer to form a photoimageable resist layer comprising a plurality of separate photoimageable resist layer portions, thereby forming at least one photoimageable resist layer bearing film comprising a plurality of photoimageable resist layer bearing film portions, each of said photoimageable resist layer bearing film portions bearing thereon at least one said photoimageable resist layer portion;

laminating said photoimageable resist layer bearing film on at least one side of a substrate so as to bring the upper surface of said photoimageable resist layer into contact with said substrate;

exposing said photoimageable resist layer to light through said carrier film to form an exposed resist layer;

removing said carrier film from said exposed resist layer;

developing said exposed resist layer to form a developed resist layer;

curing said developed resist layer to form a solder mask on said substrate; and

folding into two a leading edge portion of said photoimageable resist layer bearing film so as to have said substrate sandwiched between said photoimageable resist layer portions of at least one pair of said photoimageable resist layer bearing film portions prior to the laminating of said photoimageable resist layer bearing film on said substrate.

Claim 8 (original): The process for forming a solder mask as claimed in claim 7, further comprising:

tacking to said substrate at least one portion of said photoimageable resist layer portions in said folded leading edge portion of said photoimageable resist layer bearing film, prior to the step of laminating said photoimageable resist layer bearing film on said substrate.

Claim 9 (original): The process for forming a solder mask as claimed in claim 8, further comprising:

cutting off said folded leading edge portion while said substrate is sandwiched between said photoimageable resist layer portions of at least one pair of said photoimageable resist layer bearing film portions and at least one portion of said photoimageable resist layer portions is tacked to said substrate, prior to the step of laminating said photoimageable resist layer bearing film on said substrate.

Claims 10-11 (canceled)

Claim 12 (previously presented): A process for forming a solder mask comprising:
coating a liquid photoimageable ink on a carrier film to form a liquid photoimageable ink layer on said carrier film;

drying said liquid photoimageable ink layer to form a photoimageable resist layer comprising a plurality of separate photoimageable resist layer portions, thereby forming at least one photoimageable resist layer bearing film comprising a plurality of photoimageable resist layer bearing film portions, each of said photoimageable resist layer bearing film portions bearing thereon at least one said photoimageable resist layer portion;

laminating said photoimageable resist layer bearing film on at least one side of a substrate so as to bring the upper surface of said photoimageable resist layer into contact with said substrate;

exposing said photoimageable resist layer to light through said carrier film to form an exposed resist layer;

removing said carrier film from said exposed resist layer;

developing said exposed resist layer to form a developed resist layer;

curing said developed resist layer to form a solder mask on said substrate;

interposing said substrate between a pair of said photoimageable resist layer bearing portions so as to bring at least one of said photoimageable resist layer portions born by said photoimageable resist layer bearing portions into contact with at least one side of said substrate, prior to the step of laminating said photoimageable resist layer bearing film on said substrate;

tacking to said substrate at least one portion of said photoimageable resist layer portions while said substrate is interposed between said pair of said photoimageable resist layer bearing portions, prior to the step of laminating said photoimageable resist layer bearing film on said substrate; and

cutting off said pair of said photoimageable resist layer bearing portions while said substrate is sandwiched between said photoimageable resist layer portions of at least one pair of said photoimageable resist layer bearing film portions and at least one portion of said photoimageable resist layer portions is tacked to said substrate prior to the laminating of said photoimageable resist layer bearing film on said substrate.

Claim 13 (previously presented): The process for forming a solder mask as claimed in claim 5, wherein said substrate is a rigid substrate.

Claim 14 (original): The process for forming a solder mask as claimed in claim 13, wherein said rigid substrate is a rigid printed circuit board before said solder mask is formed thereon.

Claim 15 (previously presented): The process for forming a solder mask as claimed in claim 5, wherein said substrate is a flexible substrate.

Claim 16 (original): The process for forming a solder mask as claimed in claim 15, wherein said flexible substrate is a flexible printed circuit board before said solder mask is formed thereon.

Claim 17 (previously presented): The process for forming a solder mask as claimed in claim 5, wherein said substrate is an internal dielectric layer provided with an electric-circuit pattern.

Claim 18 (currently amended): An apparatus for forming a solder mask, comprising:
means for coating a liquid photoimageable ink on a carrier film to form a liquid photoimageable ink layer on said carrier film;

means for drying said liquid photoimageable ink layer to form a photoimageable resist layer comprising a plurality of separate photoimageable resist layer portions, thereby forming at least one photoimageable resist layer bearing film comprising a plurality of photoimageable resist layer bearing film portions, each of said photoimageable resist layer bearing film portions bearing thereon at least one said photoimageable resist layer portion;

means for laminating said photoimageable resist layer bearing film on at least one side of a substrate so as to bring the upper surface of said photoimageable resist layer into contact with said substrate;

means for exposing said photoimageable resist layer to light through said carrier film to form an exposed resist layer;

means for removing said carrier film from said exposed resist layer;

means for developing said exposed resist layer to form a developed resist layer;

means for curing said developed resist layer to form a solder mask on said substrate;

and

~~one of cutting means and folding means, said cutting means being means for cutting said photoimageable resist layer bearing film into a plurality of said photoimageable resist layer bearing film portions so as to have each of said photoimageable resist layer bearing film portions bear thereon at least one of said separate photoimageable resist layer portions prior to the laminating of said photoimageable resist layer bearing film on at least one side of said substrate, said folding means being means for folding into two a leading edge portion of said photoimageable resist layer bearing film so as to have said substrate sandwiched between said photoimageable resist layer portions of at least one pair of said photoimageable resist layer bearing film portions prior to the laminating of said photoimageable resist layer bearing film on said substrate.~~

Claim 19 (previously presented): A process for forming an internal dielectric layer provided with an electric-circuit pattern, comprising:

coating a liquid dielectric material ink on a carrier film to form a liquid dielectric material ink layer on said carrier film;

drying said liquid dielectric material ink layer to form a dielectric material layer comprising a plurality of separate dielectric material layer portions, thereby forming at least one dielectric layer bearing film comprising a plurality of dielectric material layer bearing film portions, each of said dielectric material layer bearing film portions bearing thereon at least one said dielectric material layer portion;

laminating said dielectric material layer bearing film on at least one side of a substrate so as to bring the upper surface of said dielectric material layer into contact with said substrate;

thermally curing said dielectric material layer to form a cured dielectric material layer,

removing said carrier film from said cured dielectric material layer;

subjecting said cured dielectric material layer to laser drilling to form a laser-drilled cured dielectric material layer with a drilled electric-circuit pattern;

subjecting said laser-drilled cured dielectric material layer to desmear etching;

plating said laser-drilled cured dielectric material layer with an electroconductive material, thereby forming an internal dielectric layer provided with an electric-circuit pattern; and

one of cutting and folding, said cutting comprises cutting said dielectric material layer bearing film into a plurality of said dielectric material layer bearing film portions so as to have each of said dielectric material layer bearing film portions bear thereon at least one of said separate dielectric material layer portions prior to the laminating of said dielectric material layer bearing film on at least one side of said substrate, said folding comprises folding into two a leading edge portion of said dielectric material layer bearing film so as to have said substrate sandwiched between said dielectric material layer portions of at least one pair of said dielectric material layer bearing film portions prior to the laminating of said dielectric material layer bearing film on said substrate.

Claim 20 (previously presented): The process for forming an internal dielectric layer according to claim 19, wherein said electroconductive material is copper.

Claim 21 (previously presented): An apparatus for forming a solder mask, comprising:

a coater with which a liquid photoimageable ink is to be coated on a carrier film to form a liquid photoimageable ink layer on said carrier film;

a dryer configured to dry said liquid photoimageable ink layer to form a photoimageable resist layer comprising a plurality of separate photoimageable resist layer portions, thereby forming at least one photoimageable resist layer bearing film comprising a plurality of photoimageable resist layer bearing film portions, each of said photoimageable

resist layer bearing film portions bearing thereon at least one said photoimageable resist layer portion;

a laminating device with which said photoimageable resist layer bearing film is to be laminated on at least one side of a substrate so as to bring the upper surface of said photoimageable resist layer into contact with said substrate;

an exposing unit configured to expose said photoimageable resist layer to light through said carrier film to form an exposed resist layer;

a remover with which said carrier film is to be removed from said exposed resist layer;

a developing unit configured to develop said exposed resist layer to form a developed resist layer; and

a curing unit configured to cure said developed resist layer to form a solder mask on said substrate

one of a cutting device and a folding device, said cutting device being configured to cut said photoimageable resist layer bearing film into a plurality of said photoimageable resist layer bearing film portions so as to have each of said photoimageable resist layer bearing film portions bear thereon at least one of said separate photoimageable resist layer portions prior to the laminating of said photoimageable resist layer bearing film on at least one side of said substrate, said folding device being configured to fold into two a leading edge portion of said photoimageable resist layer bearing film so as to have said substrate sandwiched between said photoimageable resist layer portions of at least one pair of said photoimageable resist layer bearing film portions prior to the laminating of said photoimageable resist layer bearing film on said substrate.

Claim 22 (previously presented): The process for forming a solder mask as claimed in claim 7, wherein said substrate is a rigid substrate.

Claim 23 (previously presented): The process for forming a solder mask as claimed in claim 22, wherein said rigid substrate is a rigid printed circuit board before said solder mask is formed thereon.

Claim 24 (previously presented): The process for forming a solder mask as claimed in claim 7, wherein said substrate is a flexible substrate.

Claim 25 (previously presented): The process for forming a solder mask as claimed in claim 24, wherein said flexible substrate is a flexible printed circuit board before said solder mask is formed thereon.

Claim 26 (previously presented): The process for forming a solder mask as claimed in claim 7, wherein said substrate is an internal dielectric layer provided with an electric-circuit pattern.

Claim 27 (previously presented): The process for forming a solder mask as claimed in claim 7, wherein in the step of laminating said photoimageable resist layer bearing film on at least one side of a substrate, said photoimageable resist layer bearing film portion is laminated on at least one side of said substrate so as to bring the upper surface of at least one of said photoimageable resist layer portions into contact with said substrate.

Claim 28 (previously presented): The process for forming a solder mask as claimed in claim 12, wherein said substrate is a rigid substrate.

Claim 29 (previously presented): The process for forming a solder mask as claimed in claim 28, wherein said rigid substrate is a rigid printed circuit board before said solder mask is formed thereon.

Claim 30 (previously presented): The process for forming a solder mask as claimed in claim 12, wherein said substrate is a flexible substrate.

Claim 31 (previously presented): The process for forming a solder mask as claimed in claim 30, wherein said flexible substrate is a flexible printed circuit board before said solder mask is formed thereon.

Claim 32 (previously presented): The process for forming a solder mask as claimed in claim 12, wherein said substrate is an internal dielectric layer provided with an electric-circuit pattern.

Claim 33 (previously presented): The process for forming a solder mask as claimed in claim 12, wherein in the step of laminating said photoimageable resist layer bearing film on at least one side of a substrate, said photoimageable resist layer bearing film portion is laminated on at least one side of said substrate so as to bring the upper surface of at least one of said photoimageable resist layer portions into contact with said substrate.